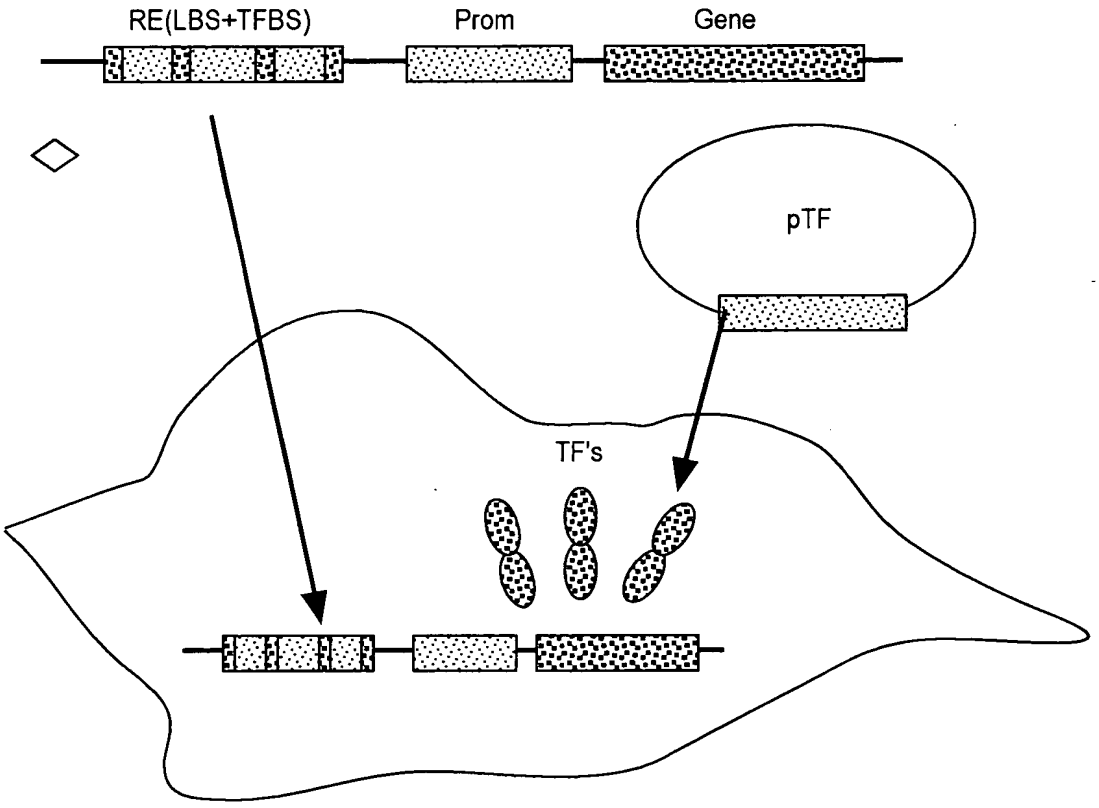

Fig. 1

distal UP

nnAAA(A/T)(A/T)T(A/T)TTTTnnAAAAnnn

proximal UP

Fig. 2A

-66 -59 UP element -38

CCCCGTCAGAAAATTATTTTAAATTTCCTCTTGTCAGGCCCGAATAACTCCCTAT
AATGCGCCAC

+1 +50

CACTGACACGGAACAACGGCAAACACGCCGCCGGGTCAGCGGGGTTCTCCT

Fig. 2B

•Direct targeting

MEF	C(TTAAAAATAA)C	SEQ:22
780BP	(TTGAAAAATCAA)CGCT	SEQ:23

•Overlapping Targeting (test for up or down-stream)

UL9	(ttttTGTT)CGCAC(TTtttttt)	SEQ:24
NFκB	(tttttGGG[AtTTT)CCttttt)	SEQ:25
LacO	(aaaaAATT)GTGAGCGCTCAC(AATTtttt)	SEQ:26
NtBBF1	(tttACT[TTA)tttt]	

Fig. 3

rrnB P1 promoter UP Sequences

RLG3097	(core)	GACTGCAGTGGTACCTAGGAGG	SEQ:14
RLG3074	(wt)	AG**AAAATTATTTTAAATTT**CCT	SEQ:13
RLG4192		GG**AAAATTTTTTTTCAAAA**GTA	SEQ:16
RLG4174		TG**AAATTTATTTT**GCGAAAGGG	SEQ:17

Fig. 4A

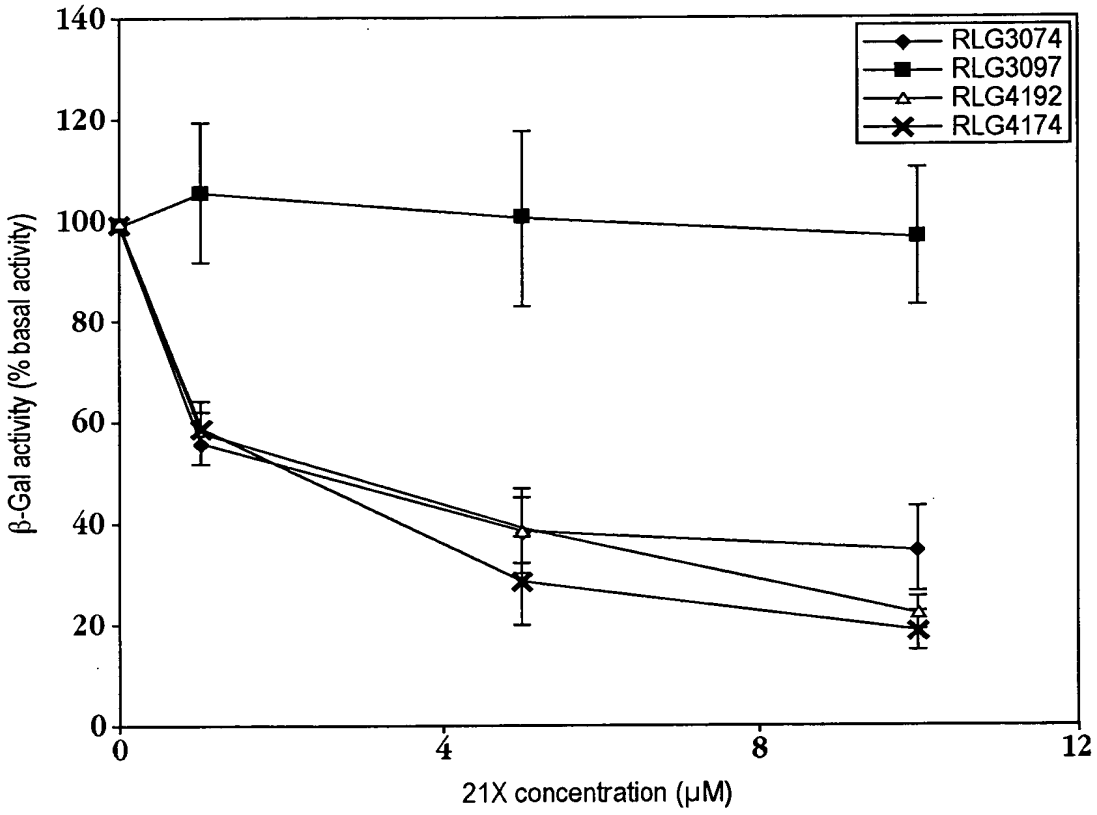
140
120
100
80
60
40
20
0
β-Gal activity (% basal activity)
0
4
8
12
21X concentration (μM)
RLG3074
RLG3097
RLG4192
RLG4174

Fig. 4B

YK 202LX (52-mer) 5' CATGGACG CCACTG AGCCG*TTTT* **TGTTCGCACTT** GAGGCGAGTCGATGCACC 3'
3' GTACCTGC GGTGAC TCGGC*AAAA* **ACAAGCGTGAA** CTCCGCTCAGCTACGTGG 5'

YK 202RX-A (54-mer) 5' CATGGACG CCACTG AG*CCG* **TGTTCGCACTT** *TTTTTT*GAGGCGAGTCGATGCACC 3'
YK 202RX-B (54-mer) 3' GTACCTGC GGTGAC TC*GGC* **ACAAGCGTGAA** *AAAAAA*CTCCGCTCAGCTACGTGG**B** 5'

YK 202LRX (58-mer) 5' CATGGACG CCACTG AG*CCGTTTT* **TGTTCGCACTT** *TTTTTT*GAGGCGAGTCGATGCACC 3'
3' GTACCTGC GGTGAC TC*GGCAAAA* **ACAAGCGTGAA** *AAAAAA*CTCCGCTCAGCTACGTGG 5'

Fig. 5

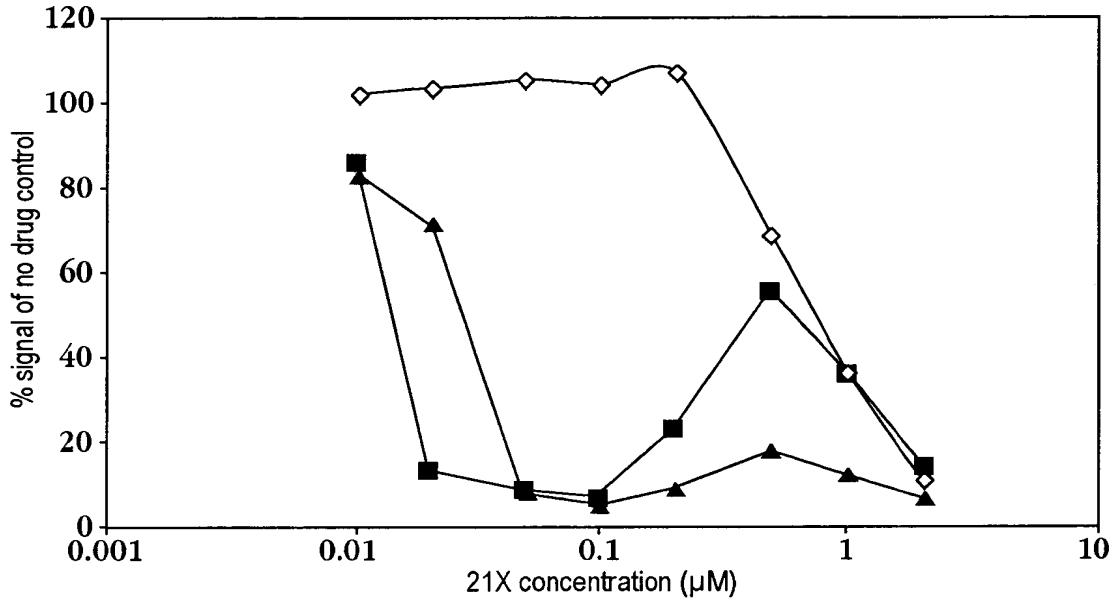
120
100
80
60
40
20
0
% signal of no drug control
0.001
0.01
0.1
1
10
21X concentration (μM)

Fig. 6

JF 101 (NFKB1) (50mer) (right side)

5' cgac cgtgctcgag **TTAACGGGACTTTCCAAaaa** cgatcg gact ggactc 3'
3' gctg gcacgagctc **AATTGCCCTGAAAGGTTttt** gctagc ctga cctgag 5'

JF 102 (NFKB2) (60mer) (right side)

5' cgac cgtgctcgag **TTAACGGGAtTTTCCAAaaa** cgatcg gact ggactc 3'
3' gctg gcacgagctc **AATTGCCCTaAAAGGTTttt** gctagc ctga cctgag 5'

JF 103 (NFKB3) (60mer) (both side)

5' cgac cgtgctcgag **aaattGGGAtTTTCCAAaaa** cgatcg gact ggactc 3'
3' gctg gcacgagctc **tttaaCCCTaAAAGGTTttt** gctagc ctga cctgag 5'

Fig. 7

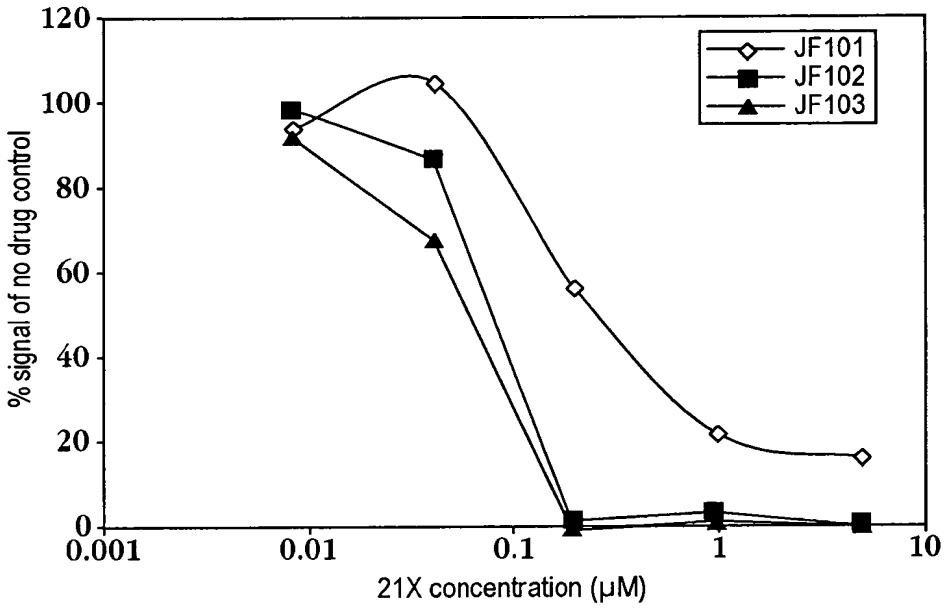
120
100
80
60
40
20
0
% signal of no drug control
0.001
0.01
0.1
1
10
21X concentration (μM)
JF101
JF102
JF103

Fig. 8A

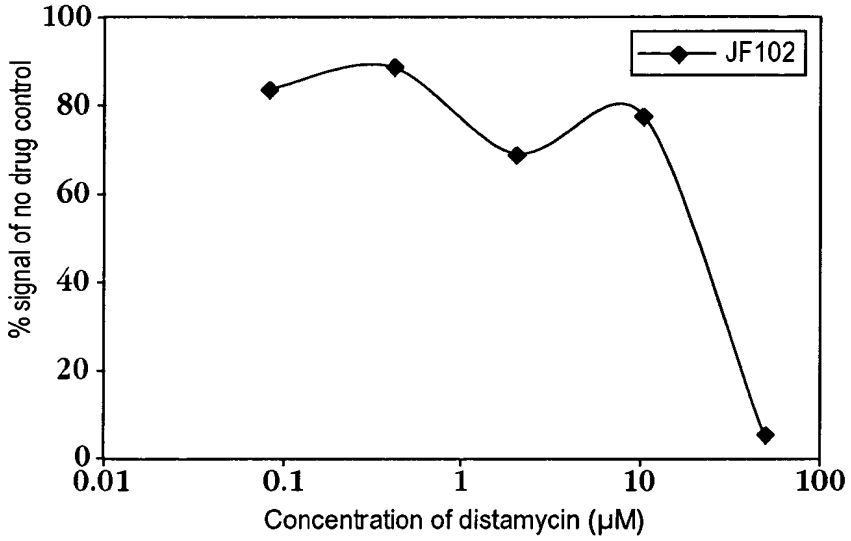
100
80
60
40
20
0
% signal of no drug control
JF102
0.01
0.1
1
10
100
Concentration of distamycin (μM)

Fig. 8B

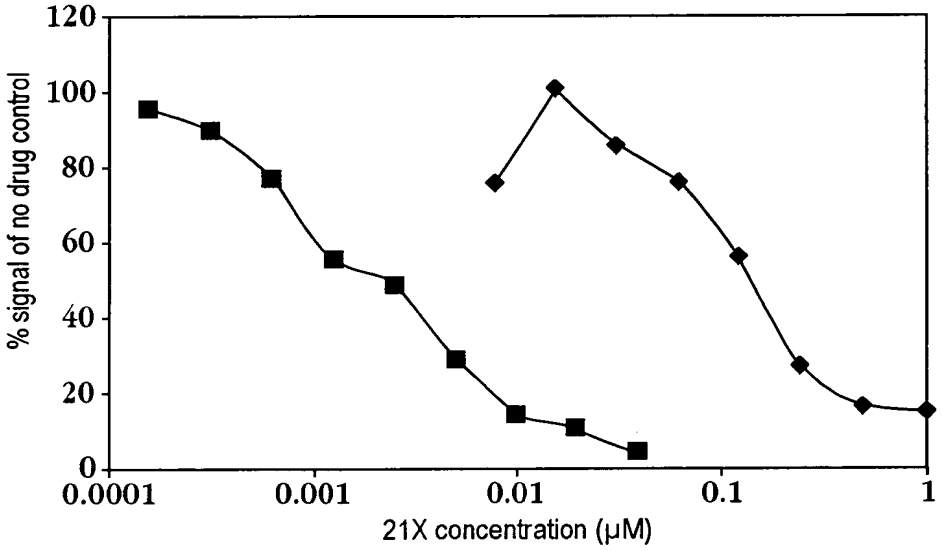
120
100
80
60
40
20
0
% signal of no drug control
0.0001
0.001
0.01
0.1
1
21X concentration (μM)

Fig. 9

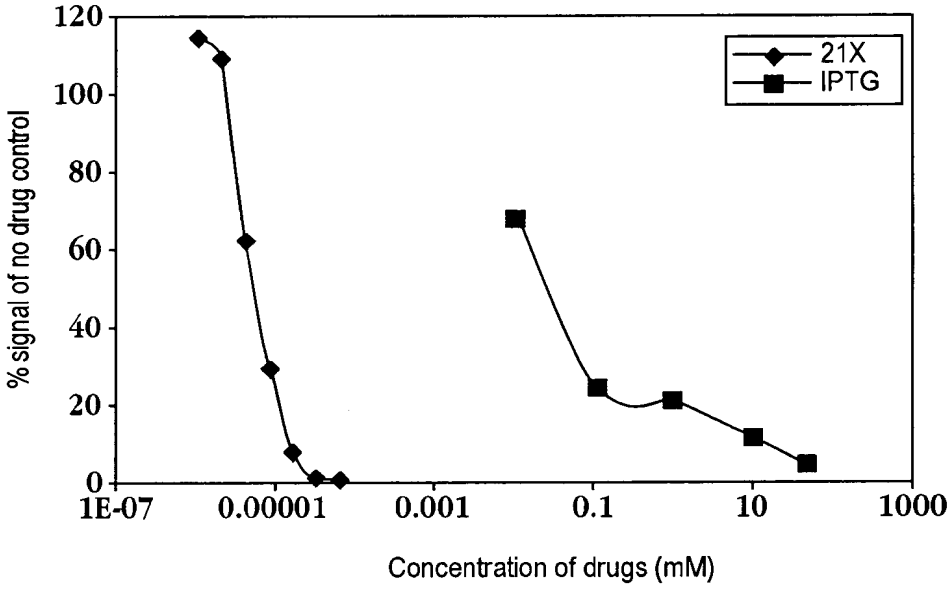
120
100
80
60
40
20
0
% signal of no drug control
21X
IPTG
1E-07
0.00001
0.001
0.1
10
1000
Concentration of drugs (mM)

Fig. 10

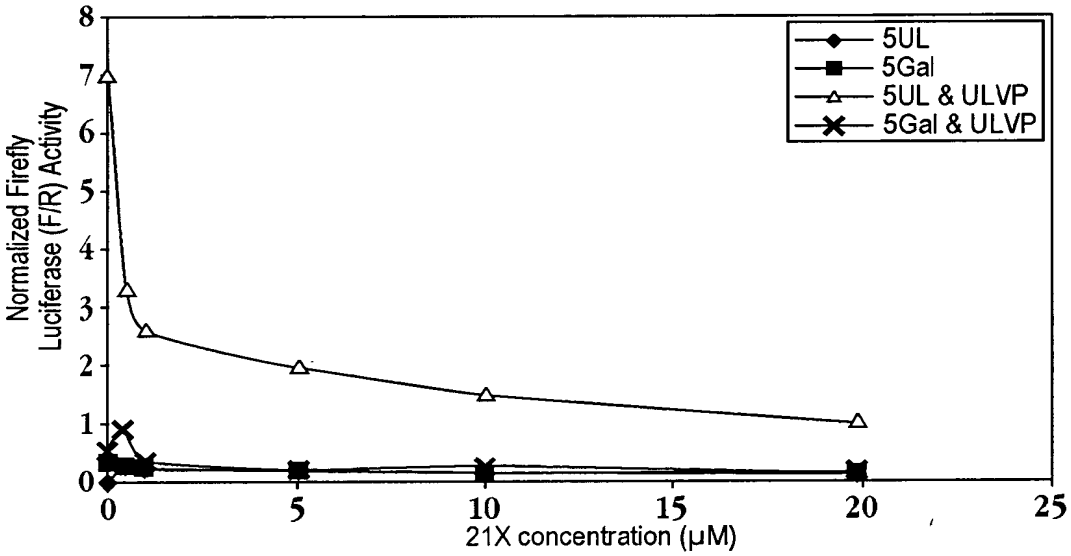
Normalized Firefly Luciferase (F/R) Activity
21X concentration (μM)
5UL
5Gal
5UL & ULVP
5Gal & ULVP
0
1
2
3
4
5
6
7
8
0
5
10
15
20
25

Fig. 11

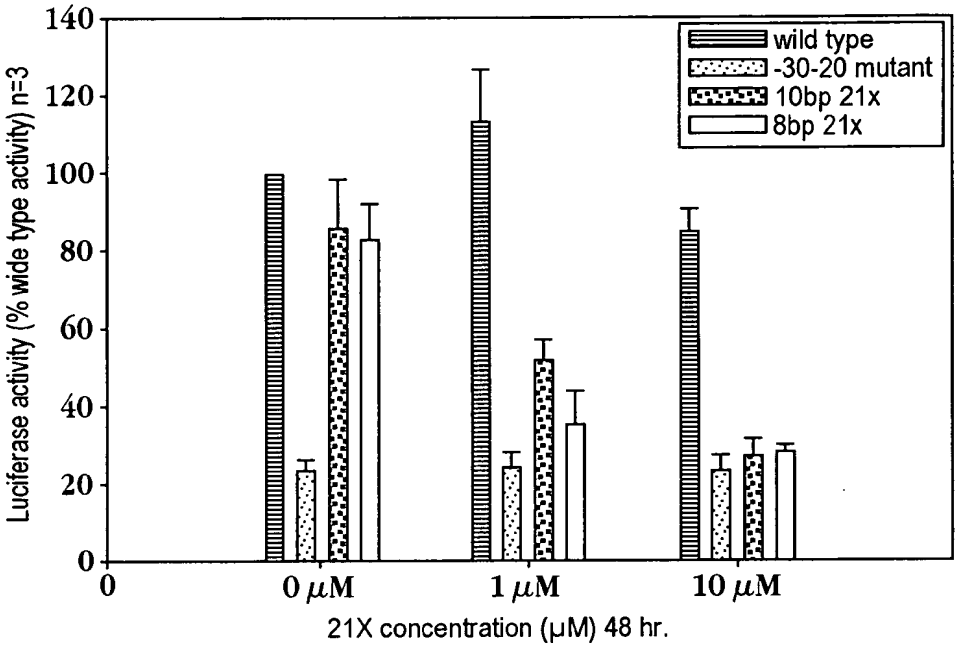
140
120
100
80
60
40
20
0
Luciferase activity (% wide type activity) n=3
wild type
-30-20 mutant
10bp 21x
8bp 21x
0
0 μM
1 μM
10 μM
21X concentration (μM) 48 hr.

Fig. 12

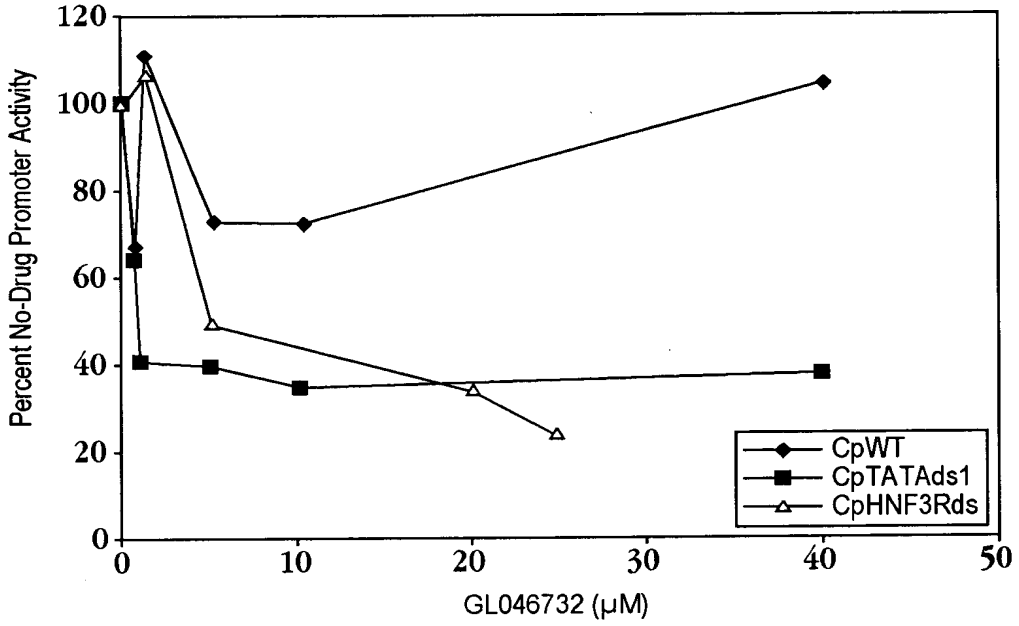
Percent No-Drug Promoter Activity
120
100
80
60
40
20
0
0
10
20
30
40
50
GL046732 (μM)
CpWT
CpTATAds1
CpHNF3Rds

Fig. 13

TCAATATTGGCCATTAGCCATATTATTCATTGGTTATATAGCATAAATCAATATTGGCTATTGGC
CATTGCATACGTTGTATCTATATCATAATATGTACATTTATATTGGCTCATGTCCAATATGACCG
CCATGTTGGCATTGATTATTGACTAGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAG
CCCATATATGGAGTTCCGCGTTACATAACTTACGGTAAATGGCCCGCCTGGCTGACCGCCCAACG
ACCCCCGCCCATTGACGTCAATAATGACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCCAT
TGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATCATAT
GCCAAGTCCGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTACA
TGACCTTACGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTG
ATGCGGTTTTGGCAGTACACCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCT
CCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTC
GTAACAACTGCGATCGCCCGCCCCGTTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCT
ATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCAC
AGTTAAATTGCTAACGCAGTCAGTGCTTCTGACACAACAGTCTCGAACTTAAGCTGCAGTGACTC
TCTTAAGGTAGCCTTGCAGAAGTTGGTCGTGAGGCACTGGGCAGGTAAGTATCAAGGTTACAAGA
CAGGTTTAAGGAGACCAATAGAAACTGGGCTTGTCGAGACAGAGAAGACTCTTGCGTTTCTGATA
GGCACCTATTGGTCTTACTGACATCCACTTTGCCTTTCTCTCCACAGGTGTCCACTCCCAGTTCA
ATTACAGCTCTTAAGGCTAGAGTACTTAATACGACTCACTATAGGCTAGCCAGCTTGAAGCAAGC
CTCCTGAAAGATGGAGGCGTCGCTGCCGGCCCAGGCCGCCGAGACGGAGGAGGTGGGTCTTTTCG
TCGAAAAATACCTCCGGTCCGATGTCGCGCCGGCGGAAATTGTCGCGCTCATGCGCAACCTCAAC
AGCCTGATGGGACGCACGCGGTTTATTTACCTGGCGTTGCTGGAGGCCTGTCTCCGCGTTCCCAT
GGCCACCCGCAGCAGCGCCATATTTCGGCGGATCTATGACCACTACGCCACGGGCGTCATCCCCA
CGATCAACGTCACCGGAGAGCTGGAGCTCGTGGCCCTGCCCCCCACCCTGAACGTAACCCCCGTC
TGGGAGCTGTTGTGCCTGTGCAGCACCATGGCCGCGCGCCTGCATTGGGACTCGGCGGCCGGGGG
ATCTGGGAGGACCTTCGGCCCCGATGACGTGCTGGACCTACTGACCCCCCACTACGACCGCTACA
TGCAGCTGGTGTTCGAACTGGGCCACTGTAACGTAACCGACGGACTTCTGCTCTCGGAGGAAGCC
GTCAAGCGCGTCGCCGACGCCCTAAGCGGCTGTCCCCCGCGCGGGTCCGTTAGCGAGACGGACCA
CGCGGTGGCGCTGTTCAAGATAATCTGGGGCGAACTGTTTGGCGTGCAGATGGCCAAAAGCACGC
AGACGTTTCCCGGGGCGGGGCGCGTTAAAAACCTCACCAAACAGACAATCGTGGGGTTGTTGGAC
GCCCACCACATCGACCACAGCGCCTGCCGGACCCACAGGCAGCTGTACGCCCTGCTTATGGCCCA
CAAGCGGGAGTTTGCGGGCGCGCGCTTCAAGCTACGCGTGCCCGCGTGGGGGCGCTGTTTGCGCA
CGCACTCATCCAGCGCCAACCCCAACGCTGACATCATCCTGGAGGCGGCGCTGTCGGAGCTCCCC
ACCGAGGCCTGGCCCATGATGCAGGGGGCGGTGAACTTTAGCACCCTAATGAAGCTACTGTCTTC
TATCGAACAAGCATGCCCAAAAAAGAAGAGAAAGGTAGATGAATTCCCGGGGATCTCGACGGCCC
CCCCGACCGATGTCAGCCTGGGGGACGAGCTCCACTTAGACGGCGAGGACGTGGCGATGGCGCAT
GCCGACGCGCTAGACGATTTCGATCTGGACATGTTGGGGGACGGGGATTCCCCGGGTCCGGGATC
GCCAGGGATCCGTCGACTTGACGCGTTGATATCATCTAGAGCGGCCGCAGGTACCTGAATAACTA
AGGCCGCTTCCCTTTAGTGAGGGTTAATGCTTCGAGCAGACATGATAAGATACATTGATGAGTTT
GGACAAACCACAACTAGAATGCAGTGAAAAAAATGCTTTATTTGTGAAATTTGTGATGCTATTGC
TTTATTTGTAACCATTATAAGCTGCAATAAACAAGTTAACAACAACAATTGCATTCATTTTATGT
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ATCCGATAAGGATCGATTCCGGAGCCTGAATGGCGAATGGACGCGCCCTGTAGCGGCGCATTAAG
CGCGGCGGGTGTGGTGGTTACGCGCACGTGACCGCTACACTTGCCAGCGCCCTAGCGCCCGCTCC
TTTCGCTTTCTTCCCTTCCTTTCTCGCCACGTTCGCCGGCTTTCCCCGTCAAGCTCTAAATCGGG
GGCTCCCTTTAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCCAAAAAACTTGATTAGGGT
GATGGTTCACGTAGTGGGCCATCGCCCTGATAGACGGTTTTTCGCCCTTTGACGTTGGAGTCCAC
GTTCTTTAATAGTGGACTCTTGTTCCAAACTGGAACAACACTCAACCCTATCTCGGTCTATTCTT
TTGATTTATAAGGGATTTTGCCGATTTCGGCCTATTGGTTAAAAAATGAGCTGATTTAACAAAAA
TTTAACGCGAATTTTAACAAAATATTAACGCTTACAATTTCGCCTGTGTACCTTCTGAGGCGGAA
AGAACCAGCTGTGGAATGTGTGTCAGTTAGGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGGCAGA
AGTATGCAAAGCATGCATCTCAATTAGTCAGCAACCAGGTGTGGAAAGTCCCCAGGCTCCCCAGC
AGGCAGAAGTATGCAAAGCATGCATCTCAATTAGTCAGCAACCATAGTCCCGCCCCTAACTCCGC

Fig. 14A

CCATCCCGCCCCTAACTCCGCCCAGTTCCGCCCATTCTCCGCCCCATGGCTGACTAATTTTTTTT
ATTTATGCAGAGGCCGAGGCCGCCTCGGCCTCTGAGCTATTCCAGAAGTAGTGAGGAGGCTTTTT
TGGAGGCCTAGGCTTTTGCAAAAAGCTTGATTCTTCTGACACAACAGTCTCGAACTTAAGGCTAG
AGCCACCATGATTGAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTAT
TCGGCTATGACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCTGTCAGCG
CAGGGGCGCCCGGTTCTTTTTGTCAAGACCGACCTGTCCGGTGCCCTGAATGAACTGCAGGACGA
GGCAGCGCGGCTATCGTGGCTGGCCACGACGGGCGTTCCTTGCGCAGCTGTGCTCGACGTTGTCA
CTGAAGCGGGAAGGGACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCATCTCAC
CTTGCTCCTGCCGAGAAAGTATCCATCATGGCTGATGCAATGCGGCGGCTGCATACGCTTGATCC
GGCTACCTGCCCATTCGACCACCAAGCGAAACATCGCATCGAGCGAGCACGTACTCGGATGGAAG
CCGGTCTTGTCGATCAGGATGATCTGGACGAAGAGCATCAGGGGCTCGCGCCAGCCGAACTGTTC
GCCAGGCTCAAGGCGCGCATGCCCGACGGCGAGGATCTCGTCGTGACCCATGGCGATGCCTGCTT
GCCGAATATCATGGTGGAAAATGGCCGCTTTTCTGGATTCATCGACTGTGGCCGGCTGGGTGTGG
CGGACCGCTATCAGGACATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGG
GCTGACCGCTTCCTCGTGCTTTACGGTATCGCCGCTCCCGATTCGCAGCGCATCGCCTTCTATCG
CCTTCTTGACGAGTTCTTCTGAGCGGGACTCTGGGGTTCGAAATGACCGACCAAGCGACGCCCAA
CCTGCCATCACGATGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTG
TGTGAAGATCCGCGTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGTTAAGCCAGC
CCCGACACCCGCCAACACCCGCTGACGCGCCCTGACGGGCTTGTCTGCTCCCGGCATCCGCTTAC
AGACAAGCTGTGACCGTCTCCGGGAGCTGCATGTGTCAGAGGTTTTCACCGTCATCACCGAAACG
CGCGAGACGAAAGGGCCTCGTGATACGCCTATTTTTATAGGTTAATGTCATGATAATAATGGTTT
CTTAGACGTCAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAA
ATACATTCAAATATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAATATTGAAA
AAGGAAGAGTATGAGTATTCAACATTTCCGTGTCGCCCTTATTCCCTTTTTTGCGGCATTTTGCC
TTCCTGTTTTTGCTCACCCAGAAACGCTGGTGAAAGTAAAAGATGCTGAAGATCAGTTGGGTGCA
CGAGTGGGTTACATCGAACTGGATCTCAACAGCGGTAAGATCCTTGAGAGTTTTCGCCCCGAAGA
ACGTTTTCCAATGATGAGCACTTTTAAAGTTCTGCTATGTGGCGCGGTATTATCCCGTATTGACG
CCGGGCAAGAGCAACTCGGTCGCCGCATACACTATTCTCAGAATGACTTGGTTGAGTACTCACCA
GTCACAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCAGTGCTGCCATAACCAT
GAGTGATAACACTGCGGCCAACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCTAACCGCTT
TTTTGCACAACATGGGGGATCATGTAACTCGCCTTGATCGTTGGGAACCGGAGCTGAATGAAGCC
ATACCAAACGACGAGCGTGACACCACGATGCCTGTAGCAATGGCAACAACGTTGCGCAAACTATT
AACTGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGCGGATAAAG
TTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAATCTGGAGCC
GGTGAGCGTGGGTCTCGCGGTATCATTGCAGCACTGGGGCCAGATGGTAAGCCCTCCCGTATCGT
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GTGGTTTGTTTGCCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAACTGGCTTCAGCAGAGC
GCAGATACCAAATACTGTCCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGAACTCTGTAG
CACCGCCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCG
TGTCTTACCGGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTCGGGCTGAACGGG
GGGTTCGTGCACACAGCCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTACAGCGTG
AGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGG
GTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAAACGCCTGGTATCTTTATAGTCCTGT
CGGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTAT
GGAAAAACGCCAGCAACGCGGCCTTTTTACGGTTCCTGGCCTTTTGCTGGCCTTTTGCTCACATG
GCTCGACAGATCT

Fig. 14B

TCAATATTGGCCATTAGCCATATTATTCATTGGTTATATAGCATAAATCAATATTGGCTATTGGC
CATTGCATACGTTGTATCTATATCATAATATGTACATTTATATTGGCTCATGTCCAATATGACCG
CCATGTTGGCATTGATTATTGACTAGTTATTAATAGTAATCAATTACGGGGTCATTAGTTCATAG
CCCATATATGGAGTTCCGCGTTACATAACTTACGGTAAATGGCCCGCCTGGCTGACCGCCCAACG
ACCCCCGCCCATTGACGTCAATAATGACGTATGTTCCCATAGTAACGCCAATAGGGACTTTCCAT
TGACGTCAATGGGTGGAGTATTTACGGTAAACTGCCCACTTGGCAGTACATCAAGTGTATCATAT
GCCAAGTCCGCCCCCTATTGACGTCAATGACGGTAAATGGCCCGCCTGGCATTATGCCCAGTACA
TGACCTTACGGGACTTTCCTACTTGGCAGTACATCTACGTATTAGTCATCGCTATTACCATGGTG
ATGCGGTTTTGGCAGTACACCAATGGGCGTGGATAGCGGTTTGACTCACGGGGATTTCCAAGTCT
CCACCCCATTGACGTCAATGGGAGTTTGTTTTGGCACCAAAATCAACGGGACTTTCCAAAATGTC
GTAACAACTGCGATCGCCCGCCCCGTTGACGCAAATGGGCGGTAGGCGTGTACGGTGGGAGGTCT
ATATAAGCAGAGCTCGTTTAGTGAACCGTCAGATCACTAGAAGCTTTATTGCGGTAGTTTATCAC
AGTTAAATTGCTAACGCAGTCAGTGCTTCTGACACAACAGTCTCGAACTTAAGCTGCAGTGACTC
TCTTAAGGTAGCCTTGCAGAAGTTGGTCGTGAGGCACTGGGCAGGTAAGTATCAAGGTTACAAGA
CAGGTTTAAGGAGACCAATAGAAACTGGGCTTGTCGAGACAGAGAAGACTCTTGCGTTTCTGATA
GGCACCTATTGGTCTTACTGACATCCACTTTGCCTTTCTCTCCACAGGTGTCCACTCCCAGTTCA
ATTACAGCTCTTAAGGCTAGAGTACTTAATACGACTCACTATAGGCTAGCCAGCTTGAAGCAAGC
CTCCTGAAAGATGGAGGCGTCGCTGCCGGCCCAGGCCGCCGAGACGGAGGAGGTGGGTCTTTTCG
TCGAAAAATACCTCCGGTCCGATGTCGCGCCGGCGGAAATTGTCGCGCTCATGCGCAACCTCAAC
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GGCCACCCGCAGCAGCGCCATATTTCGGCGGATCTATGACCACTACGCCACGGGCGTCATCCCCA
CGATCAACGTCACCGGAGAGCTGGAGCTCGTGGCCCTGCCCCCCACCCTGAACGTAACCCCCGTC
TGGGAGCTGTTGTGCCTGTGCAGCACCATGGCCGCGCGCCTGCATTGGGACTCGGCGGCCGGGGG
ATCTGGGAGGACCTTCGGCCCCGATGACGTGCTGGACCTACTGACCCCCCACTACGACCGCTACA
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GTCAAGCGCGTCGCCGACGCCCTAAGCGGCTGTCCCCCGCGCGGGTCCGTTAGCGAGACGGACCA
CGCGGTGGCGCTGTTCAAGATAATCTGGGGCGAACTGTTTGGCGTGCAGATGGCCAAAAGCACGC
AGACGTTTCCCGGGGCGGGGCGCGTTAAAAACCTCACCAAACAGACAATCGTGGGGTTGTTGGAC
GCCCACCACATCGACCACAGCGCCTGCCGGACCCACAGGCAGCTGTACGCCCTGCTTATGGCCCA
CAAGCGGGAGTTTGCGGGCGCGCGCTTCAAGCTACGCGTGCCCGCGTGGGGGCGCTGTTTGCGCA
CGCACTCATCCAGCGCCAACCCCAACGCTGACATCATCCTGGAGGCGGCGCTGTCGGAGCTCCCC
ACCGAGGCCTGGCCCATGATGCAGGGGGCGGTGAACTTTAGCACCCTACCAAAAAAGAAGAGAAA
GGTAGATCGGACACTGGTGACCTTCAAGGATGTATTTGTGGACTTCACCAGGGAGGAGTGGAAGC
TGCTGGACACTGCTCAGCAGATCGTGTACAGAAATGTGATGCTGGAGAACTATAAGAACCTGGTT
TCCTTGGGTTATTGATGAGATATCATCTAGAGCGGCCGCAGGTACCTGAATAACTAAGGCCGCTT
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AGGGGGAGATGTGGGAGGTTTTTTAAAGCAAGTAAAACCTCTACAAATGTGGTAAAATCCGATAA
GGATCGATTCCGGAGCCTGAATGGCGAATGGACGCGCCCTGTAGCGGCGCATTAAGCGCGGCGGG
TGTGGTGGTTACGCGCACGTGACCGCTACACTTGCCAGCGCCCTAGCGCCCGCTCCTTTCGCTTT
CTTCCCTTCCTTTCTCGCCACGTTCGCCGGCTTTCCCCGTCAAGCTCTAAATCGGGGGCTCCCTT
TAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCCAAAAAACTTGATTAGGGTGATGGTTCA
CGTAGTGGGCCATCGCCCTGATAGACGGTTTTTCGCCCTTTGACGTTGGAGTCCACGTTCTTTAA
TAGTGGACTCTTGTTCCAAACTGGAACAACACTCAACCCTATCTCGGTCTATTCTTTTGATTTAT
AAGGGATTTTGCCGATTTCGGCCTATTGGTTAAAAAATGAGCTGATTTAACAAAAATTTAACGCG
AATTTTAACAAAATATTAACGCTTACAATTTCGCCTGTGTACCTTCTGAGGCGGAAAGAACCAGC
TGTGGAATGTGTGTCAGTTAGGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGGCAGAAGTATGCAA
AGCATGCATCTCAATTAGTCAGCAACCAGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGGCAGAAG
TATGCAAAGCATGCATCTCAATTAGTCAGCAACCATAGTCCCGCCCCTAACTCCGCCCATCCCGC

Fig. 15A

CCCTAACTCCGCCCAGTTCCGCCCATTCTCCGCCCCATGGCTGACTAATTTTTTTTATTTATGCA
GAGGCCGAGGCCGCCTCGGCCTCTGAGCTATTCCAGAAGTAGTGAGGAGGCTTTTTTGGAGGCCT
AGGCTTTTGCAAAAAGCTTGATTCTTCTGACACAACAGTCTCGAACTTAAGGCTAGAGCCACCAT
GATTGAACAAGATGGATTGCACGCAGGTTCTCCGGCCGCTTGGGTGGAGAGGCTATTCGGCTATG
ACTGGGCACAACAGACAATCGGCTGCTCTGATGCCGCCGTGTTCCGGCTGTCAGCGCAGGGGCGC
CCGGTTCTTTTTGTCAAGACCGACCTGTCCGGTGCCCTGAATGAACTGCAGGACGAGGCAGCGCG
GCTATCGTGGCTGGCCACGACGGGCGTTCCTTGCGCAGCTGTGCTCGACGTTGTCACTGAAGCGG
GAAGGGACTGGCTGCTATTGGGCGAAGTGCCGGGGCAGGATCTCCTGTCATCTCACCTTGCTCCT
GCCGAGAAAGTATCCATCATGGCTGATGCAATGCGGCGGCTGCATACGCTTGATCCGGCTACCTG
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AAGGCGCGCATGCCCGACGGCGAGGATCTCGTCGTGACCCATGGCGATGCCTGCTTGCCGAATAT
CATGGTGGAAAATGGCCGCTTTTCTGGATTCATCGACTGTGGCCGGCTGGGTGTGGCGGACCGCT
ATCAGGACATAGCGTTGGCTACCCGTGATATTGCTGAAGAGCTTGGCGGCGAATGGGCTGACCGC
TTCCTCGTGCTTTACGGTATCGCCGCTCCCGATTCGCAGCGCATCGCCTTCTATCGCCTTCTTGA
CGAGTTCTTCTGAGCGGGACTCTGGGGTTCGAAATGACCGACCAAGCGACGCCCAACCTGCCATC
ACGATGGCCGCAATAAAATATCTTTATTTTCATTACATCTGTGTGTTGGTTTTTTGTGTGAAGAT
CCGCGTATGGTGCACTCTCAGTACAATCTGCTCTGATGCCGCATAGTTAAGCCAGCCCCGACACC
CGCCAACACCCGCTGACGCGCCCTGACGGGCTTGTCTGCTCCCGGCATCCGCTTACAGACAAGCT
GTGACCGTCTCCGGGAGCTGCATGTGTCAGAGGTTTTCACCGTCATCACCGAAACGCGCGAGACG
AAAGGGCCTCGTGATACGCCTATTTTTATAGGTTAATGTCATGATAATAATGGTTTCTTAGACGT
CAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAAATACATTCA
AATATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAATATTGAAAAAGGAAGAG
TATGAGTATTCAACATTTCCGTGTCGCCCTTATTCCCTTTTTTGCGGCATTTTGCCTTCCTGTTT
TTGCTCACCCAGAAACGCTGGTGAAAGTAAAAGATGCTGAAGATCAGTTGGGTGCACGAGTGGGT
TACATCGAACTGGATCTCAACAGCGGTAAGATCCTTGAGAGTTTTCGCCCCGAAGAACGTTTTCC
AATGATGAGCACTTTTAAAGTTCTGCTATGTGGCGCGGTATTATCCCGTATTGACGCCGGGCAAG
AGCAACTCGGTCGCCGCATACACTATTCTCAGAATGACTTGGTTGAGTACTCACCAGTCACAGAA
AAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAA
CACTGCGGCCAACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCTAACCGCTTTTTTGCACA
ACATGGGGGATCATGTAACTCGCCTTGATCGTTGGGAACCGGAGCTGAATGAAGCCATACCAAAC
GACGAGCGTGACACCACGATGCCTGTAGCAATGGCAACAACGTTGCGCAAACTATTAACTGGCGA
ACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGCGGATAAAGTTGCAGGAC
CACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAATCTGGAGCCGGTGAGCGT
GGGTCTCGCGGTATCATTGCAGCACTGGGGCCAGATGGTAAGCCCTCCCGTATCGTAGTTATCTA
CACGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGACAGATCGCTGAGATAGGTGCCTCAC
TGATTAAGCATTGGTAACTGTCAGACCAAGTTTACTCATATATACTTTAGATTGATTTAAAACTT
CATTTTTAATTTAAAAGGATCTAGGTGAAGATCCTTTTTGATAATCTCATGACCAAAATCCCTTA
ACGTGAGTTTTCGTTCCACTGAGCGTCAGACCCCGTAGAAAAGATCAAAGGATCTTCTTGAGATC
CTTTTTTTCTGCGCGTAATCTGCTGCTTGCAAACAAAAAAACCACCGCTACCAGCGGTGGTTTGT
TTGCCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAACTGGCTTCAGCAGAGCGCAGATACC
AAATACTGTCCTTCTAGTGTAGCCGTAGTTAGGCCACCACTTCAAGAACTCTGTAGCACCGCCTA
CATACCTCGCTCTGCTAATCCTGTTACCAGTGGCTGCTGCCAGTGGCGATAAGTCGTGTCTTACC
GGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGCAGCGGTCGGGCTGAACGGGGGGTTCGTG
CACACAGCCCAGCTTGGAGCGAACGACCTACACCGAACTGAGATACCTACAGCGTGAGCTATGAG
AAAGCGCCACGCTTCCCGAAGGGAGAAAGGCGGACAGGTATCCGGTAAGCGGCAGGGTCGGAACA
GGAGAGCGCACGAGGGAGCTTCCAGGGGGAAACGCCTGGTATCTTTATAGTCCTGTCGGGTTTCG
CCACCTCTGACTTGAGCGTCGATTTTTGTGATGCTCGTCAGGGGGGCGGAGCCTATGGAAAAACG
CCAGCAACGCGGCCTTTTTACGGTTCCTGGCCTTTTGCTGGCCTTTTGCTCACATGGCTCGACAG
ATCT

Fig. 15B